RIVER STAGES AND FLOODS FOR MAY 1949

The most damaging floods during the month occurred in the Upper Trinity at Fort Worth, Tex. It was the worst flood on record for that city. Severe damage also occurred in the Arkansas Basin in Oklahoma from the record to near record floods.

Atlantic Slope Drainage.—Considerable rainfall in Maine during the last decade of May brought the river flow to near normal and the reservoir storage to about 85 percent of normal. In New Hampshire the streamflow was somewhat below normal even though the rainfall for the month was above normal, as the snow melted well in advance of the normal date due to the early spring.

There were no major rises in the Delaware River Basin during the month even though the precipitation averaged nearly twice normal. Minor rises occurred on the 22–23rd on the Perkiomen and Brandywine Creeks. Rises of 3 to 4 feet occurred in the West Branch of the Susquehanna in Pennsylvania from the heavy rains on the 19th and 20th which averaged more than 2.5 inches.

Near bank-full stages occurred in the Upper Rappahannock at Remington, Va., due to the heavy rain on the 2d and 3d. The precipitation over the Rappahannock Basin during this storm averaged 1.2 inches.

Heavy rain occurred over the headwaters of the Roanoke on the last day of April and on May 16th causing rapid rises to above flood stage at Altavista, Va., on May 2d and 17th. No flooding occurred at other points as the crest flattened out as it moved downstream. Heavy showers occurred over most of eastern North Carolina on the 10th and 11th with the heaviest showers (over 4 inches) in the Raleigh area, causing high stages on the Neuse River below Neuse, N. C. Flooding also resulted on the Roanoke and lower Cape Fear Rivers. Some pasture and crop damage resulted from the inundation along the Neuse.

Heavy rains occurred in the Yadkin and Santee River Basins and light to moderate rains in the Pee Dee Valley in South Carolina on the 1st causing light flooding along several streams. No damage was reported but there was considerable loss in wages due to interruption of lumbering activities.

Heavy to excessive rains from April 28 through May 2d caused light flooding in several streams in Georgia. The rainfall averaged 3.85 inches in the Savannah drainage area above Augusta and 2.97 inches in the Ogeechee drainage. No damage of consequence resulted.

East Gulf of Mexico drainage.—Heavy rains occurred in the East Gulf of Mexico drainage during the last three days of April and the first two days of May and caused light to moderate flooding in streams in the area. Some damage resulted to growing crops and the loss in wages due to the interruption of gravel dredging and logging operations.

Missouri Basin.—Local minor overflows occurred on the Upper Republican, Solomon and Blue Rivers during the beginning and ending of the month. During the latter period there was also some light local overflow on the lower Marais des Cygnes. The first overflows were the result of moderate rains on the 5th and 6th (0.75 inch in Upper Blue and Solomon to slightly over an inch over much of the Republican) followed by heavy rains on the 7th and 8th (nearly 2 inches in the Upper Republican and Upper Blue and 1 inch in Upper Solomon.)

Light flooding resulted on the North Fork of the Elkhorn at Pierce, Nebr., from the heavy rain on the 20th and 21st. The heaviest rains were reported in the Wausa-Osmond-Pierce area averaging from 4 to 4.5 inches during the 18-hour period ending at noon on the 21st. The remainder of the North Fork Valley received from 1.5 to nearly 3 inches.

Ohio Basin.—Heavy thundershowers over the upper portion of the Wabash River on the 21st caused sharp rises to above bank-full stages from Wabash to Terre Haute, Ind. Additional rain occurred on the 22d and 23d. The total rainfall during the period was as follows: Logansport, 5 inches; Peru and Monticello, 4 inches; Wabash and Rochester, 3 inches; and La Fayette, Covington and Terre Haute, 2 inches. Some damage resulted to growing crops at La Fayette and Covington.

Arkansas Basin.—There was considerable flooding in the Arkansas Basin during May with most of it occurring in Oklahoma. The maximum stage of record occurred on the South Fork at Alva and on Medicine Lodge River at Kiowa, Okla. Severe flooding of near-record proportions occurred along the Cimarron. The crest of 15.0 feet at Perkins, Okla., was the highest since October 5, 1926, when the maximum stage of 17 feet was reached. The crest on Cottonwood Creek at Guthrie, Okla., was 2 feet higher than the maximum of record established in 1897 and on the Cimarron at the same point it was the third highest of record. Minor to moderate flooding occurred along the Arkansas from Fort Smith to Morrilton, Ark. The severe flooding was due to heavy to excessive rains on the 1st, 7th, and 16th to 26th ranging from 5 to 10 inches. Severe damages resulted from the flooding.

Red, Lower Mississippi, and Atchafalaya Basins.—Scattered heavy showers occurred over the Sulphur in the Red Basin on April 28th and 29th (2.5 inches at Mount Pleasant, Tex.) causing light to moderate flooding below Hagansport, Tex. Only minor flooding resulted on the lower White River in Arkansas from the moderate to heavy showers with excessive rains of 5 inches in the extreme upper portion of the basin.

The Yazoo River in the Lower Mississippi Basin remained above flood stage at Yazoo City, Miss., until the 18th. It was 5 feet below flood stage at the end of the month.

Flooding along the Atchafalaya at Morgan City, La., was due to wind and tide effects.

West Gulf of Mexico drainage.—Light flooding occurred in the upper Sabine at Mineola, Tex., in the beginning of the month due to heavy rains (2 inches) on April 26 and 29. Heavy rains on the 17th caused additional flooding at this point. No damage of consequence resulted.

The flooding which resulted in Fort Worth, Tex., from heavy thundershowers on the 16th and 17th and levee breaks was the worst on record. The heaviest rains occurred over South Fort Worth with 10 inches reported in the Meadowbrook section. The rainfall averaged 4.17 inches over the Upper Trinity above Rosser, Tex. No information was available on the actual gage heights during the critical stage of the flood as the river gage was washed away early on the 17th. The crest of 25.9 feet later determined was 1.9 feet higher than the previous record crest of 24.0 feet in April 1932.

The crest at Dallas of 46.9 feet was the second highest of record. It was exceeded only by the flood of May 25, 1908, when a crest stage of 52.6 feet was reached. The only other comparable flood which has occurred on the Trinity in Dallas was in 1942, when a crest of 45.75 feet was reached on April 26.

The crest flattened out considerably as it moved downstream and no record stages were reached in the Trinity below Dallas.

Most major floods in the Upper Trinity have been caused by a series of rainstorms over a period of several

days, whereas this flood was caused by heavy thundershowers which occurred within a 24-hour period. In April 1942, run-off from four separate rainstorms over a period of 20 days moved through the channel before reaching a flood stage of 45.75 feet at the Dallas gage.

The greatest damage to urban property occurred in Fort Worth. Extensive damage was done to a national retail and mail order house in that city, numerous used and new car dealers, thousands of residences, levees, city streets, water plant and other public utilities. Much of Fort Worth was without water in the city mains for a period of about 3 days. Severe flooding occurred along the lowlands outside of the Dallas levee district, and several sections of South Dallas, unprotected by levees, were inundated. However, most of Dallas escaped damage from the flood due to protection afforded by the levee system. Levee breaks were reported near Rosser, which caused some flooding of farm lands. Damage to growing crops was greatest along the main river channel between Fort Worth and Rosser. At least 10 people are known to have lost their lives as a result of this flood in the Fort Worth area.

A major flood occurred in the upper Brazos at Lubbock, Tex., due to heavy rains (5 inches) on the 6th and 7th. Approximately 350 homes and businesses were flooded in the area. Many residents had to be evacuated by rescue boats. Damages were moderate.

Columbia Basin.—The Snake River and tributaries rose steadily during May until crests were reached during the latter part of the middle decade except for minor recessions from the 4th to the 8th. No flooding occurred except on the Clearwater at Kamiah, Idaho, whose crest of 15.8 feet was 3.4 feet lower than during 1948.

Snowfall was unusually heavy during the early winter months in the Columbia River Basin above the Grand Coulee Dam. At Spokane, Wash., a record snowfall of 33 inches occurred during the month of December while for the season as a whole more than 70 inches were measured which is twice normal and one of the heaviest falls of record. By the first of March the mountain snowpack ranged from 25 to as much as 75 percent above average in the headwaters of the Clark, Flathead, Kootenai and Spokane Rivers. All streams were low in the beginning of April but rose gradually throughout the month. An unseasonable heat wave during the second week of May was accompanied by summerlike temperatures which greatly accelerated snow melting and stream flows. The Kootenai at Bonners Ferry, Idaho, rose from 12.4 feet on the 8th to 30.9 feet on the 16th, 0.1 foot below flood stage. Cooler weather on the 15th checked the rapid snow melt, with falling stages occurring in all streams shortly. Several streams reached or slightly exceeded flood stage but little or no damage occurred as the overflow was mostly on low range land or pasture land. The dikes which protect more than 30,000 acres of rich fertile wheat lands held and the only loss resulted when the waters topped one dike and inundated some 300 acres of wheat land.

The flooding at Jefferson, Oreg., on the Santiam River and at Harrisburg, Oreg., on the Willamette River in the beginning of the month was due to moderately heavy scattered rain supplemented by some snow melt. This freshet was the largest of any that has been recorded so late in the season. These floods are usually past by the middle of April. Damages consisted almost entirely of loss to prospective crops and erosion. The losses resulting from the annual flood in progress in the Columbia Basin at the close of the month were confined to flooding of pasture lands and erosion. Lower docks in the harbor along the lower Columbia and lower Willamette were evacuated well in advance of the occurrence of flood stages.

FLOOD STAGE REPORT FOR MAY 1949

[All dates in May unless otherwise specified.]

River and station	Flood stage	Above flood stages—dates		Crest[1]	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE					
Lake Erie					
	Feet			*Feet*	
St. Marys: Decatur, Ind	13	22	22	15.1	22
Maumee: Fort Wayne, Ind	15	22	23	15.8	23
ATLANTIC SLOPE DRAINAGE					
Roanoke:					
Alta Vista, Va	10	2	3	16.0	3
		11	12	15.6	11
		17	17	10.3	17
Weldon, N. C	31	12	13	33.3	13
Scotland Neck, N. C	28	12	15	28.6	14
Williamston, N. C	10	6	27	10.8	9
				11.1	18–20
Neuse:					
Neuse, N. C	14	13	13	14.0	13
Smithfield, N. C	13	11	14	17.7	13
Goldsboro, N. C	14	13	19	18.0	17
Kinston, N. C	14	17	21	15.7	20
Cape Fear: Lock No. 2, Elizabethtown, N. C	20	4	6	24.1	4
		12	15	26.2	13
Lynches: Effingham, S. C	14	6	8	14.7	7
Pee Dee:					
Cheraw, S. C	30	2	5	36.5	2
Pee Dee, S. C	19	3	18	23.5	8
Saluda: Pelzer, S. C	6	Apr. 30	6	8.6	2
Broad:					
Blairs, S. C	14	1	4	15.0	2
				15.4	3
Carlton, Ga	15	1	2	15.8	1
Savannah: Butler Creek, Ga	21	1	4	23.5	3
Ocmulgee:					
Macon, Ga	18	2	2	18.6	2
Abbeville, Ga	11	6	10	12.2	8
Oconee: Milledgeville, Ga	20	1	1	20.5	1
Altamaha: Charlotte, Ga	12	7	16	15.1	12
EAST GULF OF MEXICO DRAINAGE					
Chattahoochee: Eufaula, Ala	40	1	2	43.4	2
Flint: Albany, Ga	20	5	6	21.3	5
Apalachicola:					
Chattahoochee, Fla	20	4	5	20.9	4
Blountstown, Fla	15	1	17	21.5	6
Choctawhatchee: Caryville, Fla	12	3	5	12.2	4
Cahaba: Centerville, Ala	23	2	2	23.7	2
Alabama:					
Montgomery, Ala	35	2	5	40.0	3
Millers Ferry, Ala	40	3	9	47.0	6
Black Warrior:					
Tuscaloosa Lock and Dam, Ala	47	2	3	48.3	3
Lock No. 7, Eutaw, Ala	35	3	7	41.5	5
Tombigbee:					
Lock No. 4, Demopolis, Ala	39	3	10	49.6	7
Lock No. 3	33	2	12	51.4	7
Lock No. 2	46	3	11	52.4	8
Lock No. 1	31	3	14	35.4	10–11
Sowashee Creek: Meridian, Miss	15	2	2	15.7	2
Chickasawhay:					
Enterprise, Miss	20	3	5	21.5	4
Shubuta, Miss	30	4	5	30.5	5
Pascagoula: Merrill, Miss	22	4	9	22.9	7
Bogue Chitto: Franklinton, La	11	2	3	13.5	3
Pearl:					
Edinburg, Miss	20	4	8	22.4	5
Jackson, Miss	18	2	16	26.7	9
Monticello, Miss	15	2	6	17.0	3
Pearl River, La	12	1	14	15.7	5
		15	23		
MISSISSIPPI SYSTEM					
Missouri Basin					
Solomon: Beloit, Kans	18	10	10	18.0	10
		22	23	20.0	22
Little Blue:					
Endicott, Nebr	9	10	11	9.3	11
		21	24	14.2	22
Hanover, Kans	14	22	23	17.2	23
Big Blue:					
Beatrice, Nebr	16	23	23	16.8	23
Barnston, Nebr	18	9	9	20.0	9
		23	24	19.2	23
Blue Rapids, Kans	20	23	24	21.1	23
North Fork: Pierce (near), Nebr	12	21	23	13.5	21
		8	9	5.5	8
Republican:		13	13	5.3	13
Cambridge, Nebr	5	15	15	5.0	15
		21	21	5.1	21
		22	22	5.3	22
Clay Center, Kans	15	22	22	15.6	22
Marais des Cygnes: LaCygne, Kans	25	22	22	25.8	22

See footnotes at end of table.

FLOOD STAGE REPORT FOR MAY 1949—Continued

River and station	Flood stage	Above flood stages—dates From—	To—	Crest [1] Stage	Date
Ohio Basin					
Wabash:					
Wabash, Ind.	12	22	23	14.0	22
LaFayette, Ind.	11	23	25	15.1	23
Covington, Ind.	16	24	26	18.4	25
Terre Haute, Ind.	14	26	28	14.7	27
Arkansas Basin					
Little Arkansas:					
Sedgwick, Kans.	18	1	1	23.0	1
		17	17	18.7	17
Ripley, Kans.	11	1	2	12.2	1
				15.0	19
Cimarron:				14.4	20
Perkins, Okla.	11	17	25	14.2	22
				12.6	24
				11.6	25
Mannford, Okla.	18	19	21	23.7	19
				19.1	21
Bird Creek: Sperry, Okla.	21	19	21	26.6	20
Verdigris:					
Claremore, Okla.	38	21	22	38.6	22
Inola, Okla.	41.5	20	26	46.5	23
Neosho: Emporia, Kans.	22	22	22	24.5	22
		8	12	19.2	9
Deep Fork: Dewar, Okla.	18			21.6	19
		18	[2]	22.7	22
				23.1	25
North Canadian:					
Woodward, Okla.	5	17	17	6.0	17
Yukon, Okla.	11	18	22	15.0	19
Wetumka, Okla.	14	18	19	17.8	18
Canadian:					
Union, Okla.	7	19	19	7.6	19
		21	21	7.0	21
Calvin, Okla.	15	18	18	15.5	18
Whitefield, Okla.	16	19	19	18.8	19
Arkansas:					
Fort Smith, Ark.	22	19	30	28.6	22
				25.8	25
Van Buren, Ark.	22	19	31	29.0	22
				26.6	25
Ozark, Ark.	22	21	24	25.6	22
Dardanelle, Ark.	22	22	30	27.1	23
Morrilton, Ark.	30	23	24	31.0	24
Red Basin					
Ouachita:					
Arkadelphia, Ark.	17	2	4	21.5	3
Camden, Ark.	26	4	8	29.8	6
Little:					
Horatio, Ark.				30.5	3
Whitecliffs, Ark.	25	5	7	26.4	6
Sulphur:					
Hagansport, Tex.	38	Apr. 30	2	40.9	Apr. 30
		18	18	40.0	18
Naples, Tex.	22	2	8	26.4	4
McCartney Bridge, Tex.				22.9	11

FLOOD STAGE REPORT FOR MAY 1949—Continued

River and station	Flood stage	Above flood stages—dates From—	To—	Crest [1] Stage	Date
Lower Mississippi Basin					
				36.2	Feb. 10
Yazoo: Yazoo City, Miss.	29	Jan. 3	18	33.4	Apr. 18
				32.8	18
Atchafalaya Basin					
Atchafalaya: Morgan City, La.	[3] 6	Feb. 18	3	8.0	Mar. 21
WEST GULF OF MEXICO DRAINAGE					
Sabine: Mineola, Tex.	14	4	5	14.7	5
		22	25	16.6	23
West Fork: Fort Worth, Tex.	17	17	17	25.9	17
Elm Fork: Carrollton, Tex.	6	17	19	10.7	18
East Fork: Rockwall, Tex.	10	17	20	15.0	17
Trinity:					
Dallas, Tex.	28	17	21	46.9	18
		26	June 1	34.2	28
Rosser, Tex.	26	19	June 4	38.0	21
Trinidad, Tex.	28	21	June 7	41.5	23
Long Lake, Tex.	40	28	[2]	41.5	30
Brazos:					
Rainbow, Tex.	20	16	18	27.8	17
Waco, Tex.	27	18	18	27.3	18
GULF OF CALIFORNIA DRAINAGE					
Colorado Basin					
		Apr. 24	Apr. 27	4.5	Apr. 26
		Apr. 29	6	4.8	3
Animas: Durango, Colo.	4	11	20	4.9	16
		23	[2]	5.5	28
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Flathead: Columbia Falls, Mont.	13.2	12	18	14.8	15
Coeur d'Alene: Cataldo, Idaho	40	1	5	41.0	
		8	18	42.8	13
St. Joe: St. Maries, Idaho	35	11	20	36.7	16
Coeur d'Alene Lake: Coeur d'Alene, Idaho	30	1	[2]	34.5	17
Spokane: Spokane, Wash.	27	17	19	27.1	17–18
Clearwater: Kamiah, Idaho	14	12	18	15.8	15–16
McKenzie: Leaburg, Oreg.	12	2	2	16.0	2
Santiam: Jefferson, Oreg.	13	1	3	18.5	2
Willamette:					
Harrisburg, Oreg.	12	2	3	14.9	2
Portland, Oreg.	18	14	[2]	22.2	19
Columbia: Vancouver, Wash.	15	3	7	16.5	5
		1	[2]	22.5	18

[1] Provisional.
[2] Continued at end of month.
[3] Flood stage or higher reached intermittently.